

McGraw-Hill, Inc., Vol. 147, No. 2, pp. 60-61 (1997)). For at least the reasons set forth below, these rejections should be withdrawn.

The present invention, as defined by claim 1, relates to a method for inerting an aircraft fuel tank. The method comprising the steps of: (a) contacting compressed air with one or more first membrane modules at conditions effective to produce a first nitrogen-enriched air stream; (b) introducing the first nitrogen-enriched air stream into the fuel tank during periods of low demand for nitrogen-enriched air; (c) contacting compressed air with one or more second membrane modules at conditions effective to produce a second nitrogen-enriched air stream; and (d) introducing the second nitrogen-enriched air stream into the fuel tank during periods of high demand for nitrogen-enriched air. The first membrane modules have a lower O₂ permeance and a higher O₂/N₂ selectivity than the second membrane modules.

Edwards et al discloses a permeable membrane apparatus having one or more hollow-fiber bundles enclosed in a single housing. The apparatus is designed to provide selectable flow rates. The apparatus can be used in an aircraft fuel tank inerting system.

Edwards et al does not disclose or suggest each of the features of the presently claimed invention. For example, *Edwards et al* does not disclose or suggest using hollow fiber membrane bundles having different O₂ permeance and different O₂/N₂ selectivity. In fact, *Edwards et al* does not mention permeance or selectivity at all. Therefore, *Edwards et al* clearly fails to anticipate the claimed invention.

Applicants note the assertion in the Official Action that *Edwards et al* teaches "the first membrane module has a lower O₂ permeance and a higher O₂/N₂ selectivity than the

second membrane modules.” In support, the Official Action cites to column 10, line 61 to column 12, line 18 and Figure 13 of *Edwards et al.* On this point, the Official Action is simply wrong.

The most that *Edwards et al* says about its two bundle portions in the citations mentioned by the Examiner is that “portion 88 had a *higher capacity* than portion 90.” Col. 11, lines 54-55 (emphasis added). However, “higher capacity” does not mean that the two bundle portions have different O₂ permeance and different O₂/N₂ selectivity. *Edwards et al* does not speak of different permeance and selectivity. And in fact, the two bundle portions could have the same permeance and selectivity. The phrase “higher capacity” simply means that portion 88 can separate more volume than portion 90. This could be achieved by enlarging the contact area between the membrane and the gas to be separated. This appears to be the case if one were to compare the relative sizes of bundle portion 88 and bundle portion 90 in Figure 13 of *Edwards et al.* Accordingly, contrary to the assertion in the Official Action, *Edwards et al* does not disclose or suggest each of the features of the presently claimed invention.

Dornheim does not remedy the deficiencies of *Edwards et al.* Like *Edwards et al*, *Dornheim* does not disclose or suggest using membranes with different permeance and selectivity to provide NEA in OBIGGS. Thus, even if the references could properly be combined, their combination would still not have led one skilled in the art to arrive at the claimed invention.

Accordingly, for at least all of the reasons set forth above, none of the applied references, either alone or in combination, discloses or suggests each of the features of the

presently claimed invention. Therefore, there is no *prima facie* case of obviousness, much less one of anticipation, and the rejections under 35 U.S.C. §§ 102(b) and 103(a) should be withdrawn.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

If the Examiner has any questions concerning this Reply, or the application in general, the Examiner is invited to telephone the undersigned at the number listed below.

Respectfully submitted,

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